

REMARKS

Reconsideration of the application is requested in view of the above amendments and the following remarks. Claims 5, 7-9, and 21-26 have been amended to address formal matters. No substantive changes have been made to the pending claims.

Objections to the Drawings and Claims

The drawings were objected to under 37 C.F.R. 1.83(a) for not showing the limitations of claims 5, 23 and 24. The drawings are also objected to under 37 C.F.R. 1.83(b) because they do not include a view of the slider that shows respective heights of the slider surfaces. Further, the replacement drawings filed on September 24, 2003, have been disapproved and some of the Figures are missing a legend such as "prior art." Applicants note these deficiencies in the drawings and are in the process of generating replacement drawings that address these issues. Applicants will submit a set of replacement drawings separately with the Patent Office in the near future.

Claims 5, 7-9, and 21-25 were objected to on formal grounds set forth in paragraph 7 of the Office Action. As noted above, claims 5, 7-9, 21, 23 and 24 have been amended to address these formal issues. Withdrawal of the objection is respectfully requested.

§ 102 Rejection

Claims 1-10, 12-14 and 21-25 were rejected under 35 U.S.C. § 102(b) as being anticipated by Chapin (U.S. 5,128,822). Applicants respectfully traverse this rejection.

Chapin discloses a slider having positive pressure rails 20, 22 separated by a negative pressure cavity 28. Separating rails 20' and 22' are positioned between the positive pressure rails 20, 22 and the negative pressure cavity 28 to define channels 30, 32. The separating rails 20', 22' have sufficient width to isolate the cavity 28 from the channels 30, 32 but not to be sufficiently wide to act as rails themselves (see column 5, lines 17-22). It is the channels 30, 32, not the separating rails 20', 22' that have significance to the configuration disclosed by Chapin. When the slider is flying at a skewed angle, the trailing rail draws air from the adjacent channel 30, 32

to pressurize and lift the slider on the down stream side, thus reducing roll and loss of flying height over a range of skew angles for the slider.

The isolation channels 30, 32 may be arranged in different configuration such as the angle configuration shown in Figures 3A-3K. In this configuration, as skew of the slider increases, airflow into the channel 30 or 32 more aligned with the direction of motion will increase, while airflow into the other channel 30 or 32 decreases. The net result is that more air is available to pressurize the trailing rail (either rail 20 or 22 as the case maybe), thus reducing roll (see column 5, lines 60-66). The isolation channels 30, 32 may have different depths relative to the negative pressure cavity 28 and may have different widths so as to provide different amounts of air pressure and air volume for pressurizing the rails 20, 22.

The separate rails 20', 22' disclosed by Chapin are not first and second streamline control elements that "function to reduce lubricant accumulation," as required by claims 1 and 21, or "streamline control means located proximate to the downstream portion of the slider for eliminating stagnation and flow reversal," as required by claim 12. As noted above, Chapin discloses separating rails 20', 22' specifically and only for the purpose of defining channels 30, 32, wherein the channels 30, 32 provide a source of air to the rails 20, 22 that is separate from air in the negative pressure cavity 28.

Chapin addresses a specific problem; that of slider roll and loss of flying height over a range of skew angles and addresses these problems by providing channels of air 30, 32 having different pressure characteristics than the negative pressure cavity 28. Chapin fails to disclose in any manner streamline control elements or a streamline control means that reduce lubricant accumulation or that limits stagnation and flow reversal. Since the separation rails 20', 22' are used only for the purpose of defining air channels 30, 32, which channels are used exclusively for providing air flow with a certain volume and pressure to the positive pressure rails 20, 22, and there is no other disclosure provided by Chapin relating to other functions or purposes of rails 20', 22', Applicants respectfully submit that Chapin fails to disclose every limitation of claims 1, 12, 21, and the claims that depend from them. Withdrawal of the rejection is respectfully requested.


Further to the above, Applicants submit that the cross rail 24 disclosed by Chapin is not a "third air bearing surface, "wherein the first air bearing surface and the second air bearing surface are bridged by the third air bearing surface," as required by claim 6. The cross rail 24 is separated from the rails 20, 22 by the channels 30, 32 and therefore is not bridging the rails 20, 22. Still further, Chapin fails to disclose "a third air bearing surface, wherein the first air bearing surface and the second air bearing surface are connected at an end of the first and second air bearing surfaces by the third air bearing surface," as required by claim 25. Again, the rails 20, 22 and end portions 25, 27 of those rails are separated from the cross rail 24 by the channels 30, 32 as well as the leading cavity 26.

In view of the above, Applicants request reconsideration of the application in the form of a Notice of Allowance. If a phone conference would be helpful in resolving any issues related to this matter, please contact Applicants attorney below at 612.371.5387.

Respectfully submitted,

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